

Application No. 10/087,256
Amendment F dated May 3, 2006
Reply to Office Action of March 17, 2006

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A biodegradable composition comprising:
at least one soft synthetic thermoplastic biodegradable polymer having a glass transition temperature less than about $[-10^{\circ}]$ 0°C . and comprising an aliphatic-aromatic copolyester formed from 1,4-butanediol, adipic acid, and dialkyl terephthalate; and
at least one stiff synthetic thermoplastic biodegradable polymer having a glass transition temperature greater than about 10°C .,
~~wherein the at least one stiff synthetic thermoplastic biodegradable polymer comprises at least one member selected from the group consisting of polylactic acid, polyesteramides, polyethylene terephthalates modified by replacing a portion of terephthalate groups with aliphatic diacid ester groups, and terpolymers including units formed from each of glycolide, lactide and ϵ -caprolactone,~~
wherein the biodegradable composition is suitable for formation into at least one of sheets or films,
~~wherein the biodegradable composition optionally includes, in addition to the at least one soft synthetic thermoplastic biodegradable polymer and the at least one stiff synthetic thermoplastic biodegradable polymer, a natural polymer portion consisting essentially of thermoplastic starch that is substantially free of thermoplastic starch made using high boiling liquid plasticizers.~~
2. (Cancelled)
3. (Cancelled)
4. (Cancelled)

Application No. 10/087,256
Amendment F dated May 3, 2006
Reply in Office Action of March 17, 2006

5. (Previously Presented) A biodegradable composition as defined in claim 1, wherein the stiff synthetic thermoplastic biodegradable polymer is included in an amount greater than about 55% by combined weight of the soft and stiff synthetic thermoplastic biodegradable polymers.

6. (Currently Amended) A biodegradable composition as defined in claim 1, ~~wherein the~~ further comprising thermoplastic starch made without high boiling liquid plasticizers ~~is included in an amount of less than about 10% by combined weight of the thermoplastic starch and the soft and stiff synthetic biodegradable polymers.~~

7. (Previously Presented) A biodegradable composition as defined in claim 1, wherein the stiff synthetic thermoplastic biodegradable polymer is included in a range of about 70% to about 95% by combined weight of the soft and stiff synthetic thermoplastic biodegradable polymers.

8. (Previously Presented) A biodegradable composition as defined in claim 1, wherein the stiff synthetic thermoplastic biodegradable polymer has a glass transition temperature greater than about 15° C.

9. (Previously Presented) A biodegradable composition as defined in claim 1, wherein the stiff synthetic thermoplastic biodegradable polymer has a glass transition temperature greater than about 25° C.

10. (Previously Presented) A biodegradable composition as defined in claim 1, wherein the stiff synthetic thermoplastic biodegradable polymer has a glass transition temperature greater than about 35° C.

11. (Previously Presented) A biodegradable composition as defined in claim 1, wherein the soft synthetic thermoplastic biodegradable polymer has a glass transition temperature less than about -20° C.

Application No. 10/087,256
Amendment F dated May 3, 2006
Reply to Office Action of March 17, 2006

12. (Previously Presented) A biodegradable composition as defined in claim 1, wherein the soft synthetic thermoplastic biodegradable polymer has a glass transition temperature less than about -30°C .

13. (Original) A biodegradable composition as defined in claim 1, further including at least one nonbiodegradable polymer.

14. (Original) A biodegradable composition as defined in claim 1, further including at least one of a particulate filler or a fibrous filler.

15. (Original) A biodegradable composition as defined in claim 14, wherein the particulate filler comprises an inorganic filler.

16. (Original) A biodegradable composition as defined in claim 15, wherein the inorganic filler is included in an amount greater than about 10% by weight of the biodegradable composition.

17. (Original) A biodegradable composition as defined in claim 15, wherein the inorganic filler is included in an amount greater than about 20% by weight of the biodegradable composition.

18. (Original) A biodegradable composition as defined in claim 15, wherein the inorganic filler is included in an amount greater than about 30% by weight of the biodegradable composition.

19. (Original) A biodegradable composition as defined in claim 14, wherein the particulate filler comprises an organic filler.

Application No. 10/087,256
Amendment F dated May 3, 2006
Reply to Office Action of March 17, 2006

20. (Currently Amended) A biodegradable composition comprising:
- at least one soft synthetic thermoplastic biodegradable polymer having a glass transition temperature less than about $[-10^{\circ}]$ 0° C. and that comprises an aliphatic-aromatic copolyester formed from 1,4-butanediol, adipic acid, and dialkyl terephthalate;
 - at least one stiff synthetic thermoplastic biodegradable polymer having a glass transition temperature greater than about 10° C.,
 - ~~wherein at least one of the soft thermoplastic biodegradable polymer or the stiff thermoplastic biodegradable polymer comprises thermoplastic starch that is substantially free of glycerin; and~~
 - at least one solid particulate filler included in an amount of at least about 10% by weight of the biodegradable composition,
 - wherein the biodegradable composition is suitable for formation into at least one of sheets or films by means of extrusion, film-blowing, or casting,
 - wherein the biodegradable composition is substantially free of thermoplastic starch made using high boiling liquid plasticizers.

21. (Original) A biodegradable composition as defined in claim 20, wherein the solid filler comprises at least one of an inorganic particulate filler or an organic particulate filler.

22. (Previously Presented) A biodegradable composition as defined in claim 21, wherein the inorganic particulate filler is included in an amount greater than about 20% by weight of the biodegradable composition.

Application No. 10/087,256
Amendment F dated May 3, 2006
Reply to Office Action of March 17, 2006

23. (Currently Amended) A sheet or film formed from a biodegradable composition comprising:

at least one stiff thermoplastic biodegradable polymer having a glass transition temperature greater than about 10° C., ~~the at least one stiff thermoplastic biodegradable polymer comprising thermoplastic starch having sufficiently high crystallinity so as to be a stiff thermoplastic polymer, the thermoplastic starch being substantially free of high boiling liquid plasticizers;~~ and

at least one soft synthetic thermoplastic biodegradable polymer having a glass transition temperature less than about $[-10^{\circ}]$ 0° C. and that comprises an aliphatic-aromatic copolyester,

wherein the biodegradable composition is formed into the sheet or film by extrusion, film-blowing, or casting,

wherein the biodegradable composition is substantially free of thermoplastic starch made using high boiling liquid plasticizers.

24. (Currently Amended) A sheet or film as defined in claim 23, wherein the at least one soft synthetic thermoplastic biodegradable polymer comprises an aliphatic-aromatic copolyester formed from 1,4-butanediol, adipic acid, and dialkyl terephthalate.

Application No. 10/087,256
Amendment F dated May 3, 2006
Reply to Office Action of March 17, 2006

25. (Currently Amended) A sheet or film suitable for use as a food wrap formed from a biodegradable composition comprising:

at least one stiff thermoplastic biodegradable polymer having a glass transition temperature greater than about 10° C.,

the at least one stiff thermoplastic biodegradable polymer ~~optionally~~ comprising at least one member selected from the group consisting of polylactic acid, polyesteramides, polyethylene terephthalates modified by replacing a portion of terephthalate groups with aliphatic diacid ester groups, terpolymers including units formed from each of glycolide, lactide and ε-caprolactone, and thermoplastic starch that is substantially free of high boiling liquid plasticizers glycerin; and

at least one soft thermoplastic biodegradable polymer having a glass transition temperature less than about 0° C., the at least one soft thermoplastic biodegradable polymer comprising an aliphatic-aromatic copolyester,

wherein the biodegradable composition is formed into the sheet or film by extrusion, film-blowing, or casting,

wherein the biodegradable composition is substantially free of thermoplastic starch made using high boiling liquid plasticizers.

26. (Previously Presented) A biodegradable composition as defined in claim 1, wherein the at least one soft biodegradable polymer further includes at least one of polybutylene succinate, polybutylene succinate adipate, or polyethylene succinate, and wherein the aliphatic-aromatic copolyester includes units formed from adipic acid, dialkyl terephthalate, and at least one aliphatic diol.

27. (Previously Presented) A sheet or film as defined in claim 25, the biodegradable composition comprising thermoplastic starch having sufficiently high crystallinity so as to be a stiff thermoplastic polymer.

Application No. 10/087,256
Amendment F dated May 3, 2006
Reply to Office Action of March 17, 2006

28. (Previously Presented) A sheet or film as defined in claim 25, the at least one stiff thermoplastic biodegradable polymer consisting essentially of one or more synthetic biodegradable polymers, the biodegradable composition comprising thermoplastic starch having sufficiently low crystallinity so as to be a soft thermoplastic polymer.